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10/520,758	01/11/2005	Hitoshi Iochi	L9289.04195	2646

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EXAMINER	
FOUD, HICHAM B	

ART UNIT	PAPER NUMBER
2619	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,758	IOCHI ET AL.	
	Examiner	Art Unit	
	HICHAM B. FOUD	2619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/11/2005 and 02/14/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it does not describe the invention as a whole. Correction is required. See MPEP § 608.01(b).

2. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 22-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The specification as originally filed does not adequately describe the feature of "plurality of orthogonal symbol patterns". More specifically, the claim calls for "spreading the plurality of type of control information after the encoding using a single spreading code". Based on the prior art definition of spreading codes, it is understood that the single spreading code is orthogonal to other spreading codes of the other communication terminals so to prevent interference between the transmitted and received signals. However, the specification does not adequately disclose using both "**orthogonal**" symbol patterns in addition to spreading with another orthogonal code. Further, the specification as originally filed does not give any details of the symbols patterns as being orthogonal, and the symbol patterns having different polarities as in the specification "assigning one or a plurality of symbol patterns to one communication terminal and changing polarities of the symbol patterns according to the contents of control information to be transmitted" (see [0128]) do not necessarily provide for the claimed "orthogonality" to a person of skill in the art. Therefore, using an orthogonal spreading code to an already orthogonalized symbol pattern appears to be

against the established standard of using the spreading codes. A person of skill in the art would not know different layers of orthogonality for the same signal. Thus, Examiner concludes that the claimed feature indicated above is a new matter and without further teachings, one skilled in the art does not know how to make and use the claimed invention without undue experimentation.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 22-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

For claims 22-24, the use of a plurality of orthogonal symbol patterns that differ between the plurality of types of the control information is vague and indefinite because it is not known the metes and the bounds of the claimed invention.

The claims are rejected as best understood.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 14, 16, 17 and 20-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Karjalainen (US 2002/0176438).

For claim 14, Karjalainen discloses a radio base station apparatus that communicates with a communication terminal, the radio base station apparatus comprising a transmission signal former that multiplexes a plurality of types of control information for a single communication terminal for use in uplink packet transmission (see Figure 4 elements 408; MUX which multiplexed the control information 400A), using a single spreading code (see Figure 4 element 406A and [0021] lines 11-12; selection of a single spreading code per user) and a plurality of symbol patterns that differ between the plurality of types of control information (see Figure 4 elements 408; Scramble; the use of different scramble codes), and forms transmission signals (see Figure 4; the output of element 408).

For claim 16, Karjalainen discloses a radio base station apparatus that communicates with a communication terminal, the radio base station apparatus comprising a multiplexer that multiplexes a plurality of types of control information for a plurality of communication terminals for use in uplink packet transmission, using a spreading code and symbol patterns in a plurality of combinations, said plurality of types of control information being provided per communication terminal (see Figure 4 elements 408; MUX which multiplexed the control information 400A after spreading and scrambling), wherein the multiplexer multiplexes the plurality of types of control information for a single communication terminal using a single spreading code (see Figure 4 element 406A and [0021] lines 11-12; selection of a single spreading code per

user) and a plurality of symbol patterns that differ between the plurality of types of control information (see Figure 4 elements 408; Scramble; the use of different scramble codes).

For claim 17, Karjalainen discloses a radio network controller apparatus comprising an assigner that assigns a spreading code and symbol patterns in a plurality of combinations to a plurality of types of control information for a plurality of communication terminals for use in uplink packet transmission (see Figure 3; RNC and see [0029] lines 13-25), said plurality of types of control information being provided per communication terminal, wherein the assigner assigns a single spreading code (see Figure 4 element 406A and [0021] lines 11-12; selection of a single spreading code per user) and a plurality of symbol patterns to the plurality of types control information for a single communication terminal (see Figure 4 elements 408; Scramble; the use of different scramble codes).

For claim 20, Karjalainen discloses communication terminal apparatus comprising: a despreader that despreads a signal from a radio base station apparatus using a single spreading code provided for a single communication terminal apparatus (see Figure 4 element 428; see [0034] lines 12-15 and [0021] lines 11-12; selection of a single spreading code per user); a decoder that extracts a plurality of types of control information using symbol patterns provided from the radio base station apparatus, said plurality of types of control information for the communication terminal apparatus being multiplexed in the signal using a plurality of symbol patterns (see Figure 4 element 428; Descramble; using the same scramble code at the transmission side for each control

information); and a transmission signal former that forms uplink transmission packets based on the plurality of types of control information extracted by the decoder (the transmission signal former that uses the received control information for uplink transmission is inherent in the communication terminal for the purpose of communication to the base station).

For claim 21, Karjalainen discloses a communication terminal apparatus, wherein the plurality of types of control information comprise at least one of a packet transmission rate, a coding rate, a spreading factor, the number of spreading codes, a modulation scheme, a packet data size, a transmit power, and information about retransmission (see [0031]).

For claim 22, Karjalainen discloses a transmission signal generation method comprising: encoding a plurality of types of control information for a single communication terminal using a plurality of orthogonal symbol patterns that differ between the plurality of types of control information (see Figure 4 elements 402A; Channel encoder and [0033]); and spreading the plurality of types of control information after the encoding using a single common spreading code (see Figure 4 elements 406A).

For claim 23, Karjalainen discloses a method of receiving a plurality of types of control information for a communication terminal, the method comprising: despreading a received signal using a single spreading code common to the plurality of types of control information (see Figure 4 element 428 and see [0034] lines 12-15 and [0021] lines 11-

12; selection of a single spreading code per use)r; and decoding the signal after the despreading using a plurality of orthogonal symbol patterns that differ between the plurality of types of control information (see Figure 4 element 422; channel decoder).

For claim 24, Karjalainen discloses a radio communication system that transmits a plurality of types of control information for a single communication terminal for use in uplink packet transmission, the radio communication system comprising a radio network controller apparatus, a radio base station apparatus, and a mobile station apparatus (see Figure 3), wherein: the radio network controller apparatus designates a plurality of orthogonal symbol patterns, which differ between the plurality of types of control information, and a spreading code common to the plurality of types of control information for the radio base station apparatus and the mobile station apparatus (see Figure 3; RNC and see [0029] lines 13-25 and [0021] lines 11-12; selection of a single spreading code per user); the radio base station apparatus transmits the plurality of types of control information to a single mobile station apparatus using the plurality of orthogonal symbol patterns (see Figure 4 elements 408; Scramble; the use of different scramble codes or Channel encoder "element 402A") and the spreading code (see Figure 4 element 406A and [0021] lines 11-12; selection of a single spreading code per user); and the mobile station apparatus extracts the plurality of types of control information using the plurality of orthogonal symbol patterns and the spreading code (see Figure 4 element 428; despreader, descrambler and decoder and see [0034] lines 12-15).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karjalainen in view of Atarashi et al (US 7,298,721).

For claim 15, Karjalainen discloses a radio base station apparatus that communicates with a communication terminal, the radio base station apparatus comprising: a first transmission signal former that spreads transmission data for a first communication terminal using a first spreading code assigned to said first communication terminal and forms a first dedicated channel signal for said first communication terminal (see Figure 4 element 406B and [0021] lines 11-12; selection of a single spreading code per user), and that spreads transmission data for a second communication terminal using a second spreading code assigned to said second communication terminal and forms a second dedicated channel signal for said second communication terminal (see Figure 4 element 406A and [0021] lines 11-12; selection of a single spreading code per user); and a second transmission signal former that multiplexes a plurality of types of first control information for the first communication terminal and a plurality of types of second control information for the second communication terminal (see Figure 4 element 406A and [0021] lines 11-12; selection of a single spreading code per user), and a plurality of symbol patterns that differ between the plurality of types of first control information and between the plurality of types of

second control information (see Figure 4 elements 408; Scramble; the use of different scramble codes)and that forms transmission signals for the first and second communication terminals (see Figure 4; the output of element 408). Karjalainen discloses all the subject matter with the exception of using for the control information for both communication terminals a third spreading code, which is provided for common use by the first and second communication terminals. However, Atarashi et al discloses the use of one specific spreading code for common control channel for a plurality of users (see Figure 44 and column 22 lines 9-14). Thus, it would have been obvious to the one skill in the art at the time of the invention to use the common control channel as taught by the invention of Atarashi et al into the invention of Karjalainen for the purpose of avoiding over-consumption of spreading codes.

For claim 19, Karjalainen discloses an apparatus wherein the plurality of types of control information comprise at least one of a packet transmission rate, a coding rate, a spreading factor, the number of spreading codes, a modulation scheme, a packet data size, a transmit power, and information about retransmission (see [0031]).

For claim 18, Karjalainen in view of Atarashi et al discloses all the subject matter with the exception of: a first transmit power controller that controls transmit power of dedicated channel signals on a per dedicated channel basis; and a second transmit power controller that controls a transmit power of the plurality of types of first control information and a transmit power of the plurality of types of second control information, according to a transmit power of a dedicated channel for the first communication terminal and a transmit power of a dedicated channel for the second communication

terminal, respectively. However, an official notice is taken for the use of different transmission power controller for the dedicated channel and control channel or the use of only one controller depending on the design preference. Thus, it would have been obvious to the one skill in the art at the time of the invention to uses different transmission power for the dedicated channel and the control channel for the purpose of differentiating between the type of the user data transmitted.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

9. Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

When responding to this office action, applicants are advised to clearly point out the patentable novelty which they think the claims present in view of the state of the art

disclosed by the references cited or the objections made. Applicants must also show how the amendments avoid such references or objections. See 37C.F.R 1.111(c). In addition, applicants are advised to provide the examiner with the line numbers and pages numbers in the application and/or references cited to assist examiner in locating the appropriate paragraphs.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hicham B. Foud whose telephone number is 571-270-1463. The examiner can normally be reached on Monday - Friday 10 AM-6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hicham B Foud/
Examiner, Art Unit 2619
08/14/2008

/CHAU T. NGUYEN/
Supervisory Patent Examiner, Art Unit 2619